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09/997,355	11/27/2001	Tsung-Fan Lin	JCLA8138	6044

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EXAMINER	
CLEARY, THOMAS J	

ART UNIT	PAPER NUMBER
2111	3

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/997,355	Applicant(s) LIN, TSUNG-FAN	
	Examiner Thomas J. Cleary	Art Unit 2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-16 is/are rejected.

7)☒ Claim(s) 1 and 14 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 27 November 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In Lines 8-9, the meaning of the phrase "determining if any processing request corresponding thereto and any end point for the connected peripheral device" is unclear.

3. Claims 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 recites the limitation "the bus driving bus" in Line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 3, 4, 5, 7, 12, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication Number 2002/0095501 to Chiloyan et al. ("Chiloyan") and Microsoft Windows 2000 White Paper "Plug and Play for Windows 2000" ("Microsoft").

6. In reference to Claim 1, Chiloyan teaches In reference to Claim 1, Chiloyan teaches a method of processing the driving program of a smart peripheral device in a computer system using an operating system, wherein the smart peripheral device is connected to the computer system through a peripheral bus and the operating system includes a bus-driving program for controlling the peripheral bus (See Figure 1 and Page 6 Paragraph 51), the processing method comprising: requesting that the operating system return any data regarding a connectivity status of a particular peripheral device connected to the peripheral bus (See Page 6 Paragraph 51); receiving any plug-and-play indicator from the operating system (See Figure 5 Number 114 and Page 6 Paragraph 51) and inspecting a driving program of the smart peripheral device using the plug-and-play notification and determining if the connected peripheral device is supported (See Figure 5 Number 120 and Page 7 Paragraph 53). Chiloyan does not teach that if the connected peripheral device is supported, using the plug-and-play notification to open the function device object established by a factory provided driving

program; using the function device object to retrieve a physical device object established through the bus-driving program; using the physical device object to retrieve a plurality of descriptors and calling data of the connected peripheral device; and using the descriptors and calling data to set up necessary data for executing the driving program of the smart peripheral device. Microsoft teaches opening a function device object of a driving program with a plug-and-play notification, using the function device object to retrieve a physical device object, using the physical device object to retrieve a plurality of descriptors and calling data of the connected peripheral device, and using the descriptors and calling data to set up the necessary data for executing the driving program of the smart peripheral device (See Page 8 Section 'Device Objects'; Page 11 Figure 2; and Page 12 Number 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical device object use of Microsoft, resulting in the invention of Claim 1, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

7. In reference to Claim 2, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Chiloyan further teaches that requesting that the operating system return any data regarding the connectivity status of a particular peripheral device connected to the peripheral bus further includes registering the request under a plug-and-play administrator within the operating system and requesting that a classification

identification for the connected peripheral device matching the peripheral bus be returned (See Page 6 Paragraph 51 and Page 7 Paragraph 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical device object use of Microsoft, resulting in the invention of Claim 2, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

8. In reference to Claim 3, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Chiloyan further teaches that receiving the plug-and-play notification from the operating system occurs when the peripheral device has already plugged into the peripheral bus or the peripheral device has just been plugged into the peripheral bus, and the operating system utilizes the plug-and-play notification to inform the driving program (See Figure 5 Numbers 110, 112, and 114 and Page 6 Paragraph 51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical device object use of Microsoft, resulting in the invention of Claim 3, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

9. In reference to Claim 4, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Chiloyan further teaches that the peripheral device manager uses

peripheral device IDs to determine if a peripheral device is supported and to determine if the peripheral device matches the peripheral device of a device driver previously installed (See Page 7 Paragraph 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical device object use of Microsoft, resulting in the invention of Claim 4, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

10. In reference to Claim 5, Chiloyan and Microsoft teach the limitations as applied to Claim 4 above. Chiloyan further teaches that if the peripheral bus is a Universal Serial Bus, the special identification code is a vendor identification and a product identification (See Page 6 Paragraph 51), and that if the peripheral bus is an IEEE-1394 bus, the special identification code is a plug-and-play identification (See Page 9 Paragraph 71).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical device object use of Microsoft, resulting in the invention of Claim 5, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

11. In reference to Claim 7, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Microsoft further teaches that the function device object creates an

attachment, which is equivalent to a pointer, to an associated physical device object (See Page 11 Figure 2 and Page 12 Number 5). The device of Microsoft uses this pointer to retrieve a physical device object when the function device object receives an I/O request packet (See Page 12 Number 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical device object use of Microsoft, resulting in the invention of Claim 7, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

12. In reference to Claim 12, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Chiloyan further teaches that the peripheral bus is a Universal Serial Bus (See Page 6 Paragraph 51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical device object use of Microsoft, resulting in the invention of Claim 12, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

13. In reference to Claim 14, Chiloyan teaches a peripheral bus for connecting the smart peripheral device to the computer system (See Figure 1); and an operating system having a bus-driving program for controlling the peripheral bus (See Page 6

Paragraph 51). Chiloyan does not teach that the bus-driver includes a physical device object for corresponding with the smart peripheral device; a factory-provided driving program having a function device object, wherein the function device object communicates with the smart peripheral device through the physical device object; and a general-purpose driving program for communicating with the smart peripheral device through the physical device object, wherein if the smart peripheral device is connected to the computer system, the general-purpose driving program switches on the function device object established through the factory-provided driving program, retrieves the physical device object established through the bus-driving program according to the function device object, retrieves a plurality of descriptors and calling data of the smart peripheral device according to the physical device object and finally sets up necessary information for executing the general-purpose driving program. Microsoft teaches a factory-provided driving program having a function device object that communicates with the peripheral device through the physical device object; and a general purpose driving program; and a general purpose driving program that switches on the function device object of a driving program, retrieves the physical device object, retrieves a plurality of descriptors and calling data of the connected peripheral device according to the physical device object, sets up the necessary data for executing the driving program of the smart peripheral device (See Page 8 Section 'Device Objects'; Page 11 Figure 2; and Page 12 Number 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical

device object use of Microsoft, resulting in the invention of Claim 14, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

14. In reference to Claim 15, Chiloyan and Microsoft teach the limitations as applied to Claim 14 above. Chiloyan further teaches that the peripheral bus is a Universal Serial Bus (See Page 6 Paragraph 51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan with the function and physical device object use of Microsoft, resulting in the invention of Claim 15, because it would be desirable to make the plug-and-play system of Chiloyan compatible with the plug-and-play of Microsoft Windows 2000, which is a commonly used operating system.

15. Claims 6, 8, 10, 11, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiloyan and Microsoft as applied to Claim 1 above, and further in view of The Universal Serial Bus Specification, Revision 1.1 ("USB-1.1").

16. In reference to Claim 6, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Chiloyan and Microsoft do not teach that using the plug-and-play notification to open the function device object established through the factory-provided driving program includes using a device name within the plug-and-play notification

corresponding to the connected peripheral device. USB-1.1 teaches that a plug-and-play notification includes a device name (See Page 19 Section 4.6.1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan and Microsoft with the device name within the plug-and-play notification of USB-1.1, resulting in the invention of Claim 6, because the device of Chiloyan can use USB devices (See Page 6 Paragraph 51 of Chiloyan), and such devices must comply with the USB Specification.

17. In reference to Claim 8, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Chiloyan and Microsoft do not teach that if the peripheral bus is a USB, the descriptors and calling data include a device descriptor, a configuration descriptor, an interface descriptor, an end-point descriptor and a USB pipe handles. USB-1.1 teaches that descriptors and calling data for a USB device include a device descriptor, a configuration descriptor, an interface descriptor, an end-point descriptor and USB pipe handles (See Pages 196-205 Section 9.6 and Page 222 Section 10.5.2.4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan and Microsoft with the descriptors and calling data of USB-1.1, resulting in the invention of Claim 8, because the device of Chiloyan can use USB devices (See Page 6 Paragraph 51 of Chiloyan), and such devices must comply with the USB Specification.

18. In reference to Claim 10, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Chiloyan and Microsoft do not teach that if the received plug-and-play notification indicates an absent peripheral device, processing includes: inspecting whether the peripheral device is really absent; informing through calling an application program of the driving program of the peripheral device that the peripheral device is absent; canceling any in-process request on the absent peripheral device; and returning the operating system to an initial state. USB-1.1 teaches that when a peripheral device is removed, a notification is sent indicating a change in topology, which is equivalent to a notification indicating an absent peripheral device; the hub is queried to determine what kind of change occurred, which is equivalent to inspecting whether the peripheral device is really absent; and informing the application program of the driving program that the peripheral device is absent (See Pages 35-36 Section 4.6 and Page 179 Section 9.1.2). A system operating under USB-1.1 will inherently cancel any in-process requests on the absent peripheral device and return the operating system to an initial state.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan and Microsoft with the device removal procedure of USB-1.1, resulting in the invention of Claim 10, because the device of Chiloyan can use USB devices (See Page 6 Paragraph 51 of Chiloyan), and such devices must comply with the USB Specification.

19. In reference to Claim 11, Chiloyan, Microsoft, and USB-1.1 teach the limitations as applied to Claim 1 above. USB-1.1 further teaches that the non-existence of a device means that the peripheral device has been removed from the peripheral bus (See Pages 35-36 Section 4.6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan and Microsoft with the device removal procedure of USB-1.1, resulting in the invention of Claim 11, because the device of Chiloyan can use USB devices (See Page 6 Paragraph 51 of Chiloyan), and such devices must comply with the USB Specification.

20. In reference to Claim 13, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Microsoft further teaches setting up an input/output request packet; transmitting the input/output request packet to the physical device object for further processing, and when the physical device object finishes processing, responding by sending a correct signal to the application program (See Page 11 Figure 2 and Page 12 Number 5). USB-1.1 teaches inspecting the connected peripheral device to check if the peripheral device really exists, if the peripheral device is absent, responding by issuing an error signal to the application program, and if the peripheral device is not absent, determining if any processing request corresponding thereto and any end point for the connected peripheral device; if the peripheral device does not have any end point, responding by returning the error signal to the application program; setting up a request block; and when a delay is encountered, responding by sending a delay signal to the

application program (See Pages 35-36 Section 4.6; Page 179 Section 9.1.2; and Page 180 Section 9.2.3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan and Microsoft with the USB device operations of USB-1.1, resulting in the invention of Claim 13, because the device of Chiloyan can use USB devices (See Page 6 Paragraph 51 of Chiloyan), and such devices must comply with the USB Specification.

21. In reference to Claim 16, Chiloyan and Microsoft teach the limitations as applied to Claim 14 above. Microsoft further teaches setting up an input/output request packet; transmitting the input/output request packet to the physical device object for further processing, and when the physical device object finishes processing, responding by sending a correct signal to the application program (See Page 11 Figure 2 and Page 12 Number 5). USB-1.1 teaches setting up a request block; and when a delay is encountered, responding by sending a delay signal to the application program (See Pages 35-36 Section 4.6; Page 179 Section 9.1.2; and Page 180 Section 9.2.3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan and Microsoft with the USB device operations of USB-1.1, resulting in the invention of Claim 16, because the device of Chiloyan can use USB devices (See Page 6 Paragraph 51 of Chiloyan), and such devices must comply with the USB Specification.

22. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiloyan and Microsoft as applied to Claim 1 above, and further in view of The IEEE Standard for a High Performance Serial Bus ("IEEE-1394 Standard").

23. In reference to Claim 9, Chiloyan and Microsoft teach the limitations as applied to Claim 1 above. Chiloyan and Microsoft do not teach that if the peripheral bus is an IEEE-1394 bus, the descriptors and calling data are stored in a configuration read-only memory. The IEEE-1394 Standard teaches that descriptors and calling data for an IEEE-1394 device are stored in a configuration read-only memory (See Pages 227-233 Section 8.3.2.5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Chiloyan and Microsoft with the descriptors and calling data of USB-1.1, resulting in the invention of Claim 8, because the device of Chiloyan can use IEEE-1394 devices (See Page 9 Paragraph 71 of Chiloyan), and such devices must comply with the IEEE-1394 Standard.

Claim Objections

24. Claim 1 is objected to because of the following informalities: on Line 9, the term "plug-and-plug" appears to have been used in place of the term "plug-and-play". Appropriate correction is required.

25. Claim 14 is objected to because of the following informalities: on Line 2, the term "bus-driving bus" appears to have been used in place of the term "bus-driving program". Appropriate correction is required.

Specification

26. The disclosure is objected to because of the following informalities: On Page 5 Line 20, the phrase "factor-provided" appears to have been used in place of the phrase "factory-provided". Appropriate correction is required.

Drawings

27. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 2 Number 200. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, the Applicant will be notified and informed of any required corrective

action in the next Office action. The objection to the drawings will not be held in abeyance.

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Number 5,386,567 to Lien et al.; US Patent Number 5,580,177 to Gase et al.; US Patent Number 6,644,946 to Stipes et al.; "Windows Driver Model (WDM) Device Drivers"; Universal Serial Bus Understanding WDM Power Management; "Plug and Play for a Winning Combination".

29. The non-prior art made of record and not relied upon is considered pertinent to applicant's disclosure. "When Are WDM Device Objects Created? (Kernel-Mode Driver Architecture: Windows DDK"; "Guidelines for Handling Plug and Play IRPs"; "Plug and Play for Windows 2000 and Windows XP".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Cleary whose telephone number is 703-305-5824. The examiner can normally be reached on Monday-Thursday (7-4), Alt. Fridays (7-3).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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